

## GOLF SIMULATION

This draws a golf course in graphics mode with endless variations on bunkers, water hazards and roughs, and allows the player to actually 'play' the shots giving a choice of club, hitting strength and direction.

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40 REM GOLF SIMULATION
50 REM BY GARY J MCCLEARY
51 REM DEC. 1983
100 CLS
110 PRINT#33,"WELCOME TO GLENLAY GOLF CO
URSE"
111 PRINT
112 PRINT"IN GOLF THE OBJECT OF THE GAME
"
113 PRINT"IS TO HIT THE BALL FROM THE"
114 PRINT"TEE(0) TO THE HOLE IN THE"
115 PRINT"FEWEST NUMBER OF SHOTS."
120 PRINT
125 PRINT"WILL THERE BE 1 OR 2 PLAYERS?"
130 K=INKEY$
133 I=INKEY$:WW=RND(DD):DD=DD+1:IFDD>10
0THENDD=1:IFI$=""THENI33
135 IFI$="1"THENPL=1:LP=0:GOTO145
137 IFI$="2"THENPL=2:LP=0:GOTO145
140 GOTO130
145 CLS
155 PRINT"YOUR GOLF BAG CONTAINS A:"
150 PRINT
160 PRINT"WOOD MAX.RANGE 251 METRES"
165 PRINT"IRON MAX.RANGE 221 METRES"
170 PRINT"IRON MAX.RANGE 164 METRES"
175 PRINT"IRON MAX.RANGE 127 METRES"
180 PRINT"EDGE MAX.RANGE 87 METRES"
185 PRINT"PUTTER MAX.RANGE 41 METRES"
190 PRINT"AND IS ONLY USED ON THE GREEN"
194 PRINT
195 PRINT"TO ACHIEVE GREATER HEIGHT"
200 PRINT"USE A HIGH NUMBERED IRON"
205 PRINT
210 PRINT"CONTINUES THE GAME"
250 GOSUB20980
300 HQ=1:TT=0:T1=0:T2=0:GF=0
350 PA=RND(3)+2
351 PZ=RND(2)
352 IFPA=3THENP=3:SX=63:GOTO400
354 IFPA=4THENP=4.8
366 IFPA=5THENP=6.5
368 IFP=1THENSX=8
370 IFP=2THENSX=119
400 REM
420 ZB=RND(3):ZW=RND(3):ZJ=RND(3)
430 J3=RND(9)+2
450 A=RND(107)+7:BB=RND(7)+16
453 G=RND(5)+2:B=RND(9)+2:W=RND(10)+3
455 IFZJ=1THENJ3=0
456 IFZB=1THENB=0
457 IFZW=1THENW=0
458 C=RND(103)+9:D=13+RND(6)
459 MD=INT(SQR((A-SX)^2+(BB-63)^2)*P)
460 HB=SQR((A-C)^2+(BB-D)^2)
465 IFHB<G+B+3THEN458
466 E=13+RND(100):F=14+RND(35)
468 BW=SQR((C-E)^2+(D-F)^2)
470 WH=SQR((A-E)^2+(BB-F)^2)
472 IFBW<B+W+3THEN466
474 IFWH<W+G+3THEN466
480 J1=RND(103)+9:J2=RND(6)+13
485 HJ=SQR((A-J1)^2+(BB-J2)^2)
490 IFHJ<G+J3+3THEN458
492 JW=SQR((J1-E)^2+(J2-F)^2)
494 IFJW<J3+W+3THEN466
500 CLS
506 X=SX:Y=63:R1=0:B1=0:W1=0
507 SC=0
509 CLS
510 PRINT"THIS IS HOLE NUMBER" HO
511 PRINT
512 PRINT"PLAYER" LP+1
513 PRINT
514 PRINT"PAR"PA: MD "METRES"
515 SC=0:X=SX:Y=63:R1=0:B1=0:W1=0
517 GOSUB20980
522 GOSUB20000
523 GOSUB20980
524 CLS
525 PRINT"WHICH CLUB DO YOU WISH TO USE"
527 INPUTCL
530 IFCL=1THENAU=29+RND(11):GOTO600
540 IFCL=2THENAU=19+RND(11):GOTO600
550 IFCL=5THENAU=69+RND(6):GOTO600
560 IFCL=7THENAU=74+RND(6):GOTO600
570 IFCL=9THENAU=79+RND(6):GOTO600
580 CLS:PRINT"YOU DO NOT HAVE ONE OF THO
SE":GOTO525
600 CLS
602 PRINT"IN WHICH DIRECTION DO YOU WISH:H
"
610 PRINT"TO HIT? (0TO360 DEGREES)"
620 PRINT"MEASURED ANTICLOCKWISE FROM"
630 PRINT"THE RIGHT"
635 GOSUB60300
640 INPUTA2
645 CLS
650 PRINT"HOW HARD DO YOU WISH TO HIT"
660 INPUT"0TO50":U
665 CLS
668 PS=3.141592654/180
670 IFU<0THENU=0
675 IFU>50THENU=50
677 SC=SC+1
680 RA=U*U*SIN(2*A*U*PS)/3.81
682 RS=RA/P
685 HT=((SIN(A*U*PS)*U)^2)/(19.62)
686 IFR1=1THEN12000
687 IFR1=1THEN13000
690 X=X+RS*COS(A2*PS)
700 Y=Y+RS*SIN(A2*PS)
710 H=INT(X):K=INT(Y)
715 H1=0
720 IFH<0THENH=0:H1=1
725 IFH>127THENH=126:H1=1
730 IFK<0THENK=0:H1=1
735 IFK>63THENK=63:H1=0
736 X=H:Y=K
740 IFH1=1THEN9000
742 DI=SQR((A-H)^2+(BB-K)^2)
745 REM
746 IFDI<GANDGF=1THEN790
747 GOSUB20000
754 COLOR2
755 K=INKEY$
760 I=INKEY$
765 SET(H,K):SET(H+1,K)
770 RESET(H,K):RESET(H+1,K)
775 IFI$=""THEN760
780 IFI$<>" "THEN760
790 DI=SQR((A-H)^2+(BB-K)^2)
792 DB=SQR((C-H)^2+(D-K)^2)
794 DW=SQR((E-H)^2+(F-K)^2)
796 DJ=SQR((J1-H)^2+(J2-K)^2)
800 DM=DI*P
810 IFDI<GTHENGFI=1:GOTO8000
812 IFDB<BANDDB<0THEN7000
813 IFDJ<J3ANDJ3<0THEN7000
814 IFDW<WANDW<0THEN10000
816 CLS
817 PRINT"THAT SHOT WENT "INT(RA)"METRES
"
819 PRINT
820 PRINT"DISTANCE FROM THE HOLE"
822 PRINTINT(DI)"METRES"
825 PRINT"NUMBER OF STROKES="SC
827 IFPA=4ORPA=5THEN1000
830 IFH<40ANDK>31THEN1000
835 IFH<60ANDK>31THEN1000
840 IFK<8THEN1000
845 GOTO2000
1000 IFP=2THEN1500
1100 IFH>16ANDK>31THEN1000
1110 IFK<8THEN1000
1120 GOTO2000
1500 IFH<111ANDK>31THEN1000
1510 IFK<8THEN1000
1520 GOTO2000
2000 GOTO525
2000 B1=1
2005 BH=124.5
2010 PRINT"YOU ARE IN THE (BUNKER)"
2020 PRINT"YOU ARE ADVISED TO USE THE WE
DGE"
2030 GOTO525
8000 GF=1:GOTO60060
8004 CLS
8008 PRINT"YOU ARE ON THE (GREEN) AND WILL
"
8010 PRINT"BE USING THE PUTTER"
8020 PRINT"WHICH DIRECTION (0TO360)"
8025 GOSUB60300
8030 INPUTA2
8035 CLS
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# VZ200

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8040 PRINT "HOW HARD DO YOU WANT TO HIT"
8050 INPUT "(0 TO 25)"; I
8060 IF I < 0 THEN I = 0
8065 IF I > 25 THEN I = 25
8070 AU = 70
8075 CLS
8200 GOTO 677
9000 SOUND 4, 2: SC = SC + 1: GOTO 745
10000 I1 = 0
10005 SC = SC + 1
10010 H = H + 2 * W: K = K + 2 * W
10020 GOTO 60000
11000 R1 = 1
11005 RH = 111 + RND(15)
11010 PRINT
11011 PRINT "YOU ARE IN THE ROUGH"
11012 IF RH > 123 THEN B$ = "TALL TREES": GOTO 11018
11014 IF RH > 118 THEN B$ = "MEDIUM TREES": GOTO 11018
11016 IF RH > 112 THEN B$ = "LOW SCRUB": GOTO 11018
11018 PRINT "YOUR NEXT SHOT MUST CLEAR SO ME"
11019 PRINT B$
11020 PRINT
11030 GOTO 525
12000 IF HT < RH THEN RA = RND(6): GOTO 12100
12010 RA = RA / 2
12100 RA = RA / 2
13000 IF HT < BH THEN RA = 0: GOTO 13100
13010 RA = RA / 2
13100 B1 = 0: GOTO 682
15000 SOUND 20, 1: SOUND 15, 1
15002 IF LPL = 0 THEN T1 = T1 + SC: TT = T1: P1 = P1 + SC: PA = Q + P1
15003 IF LPL = 1 THEN T2 = T2 + SC: TT = T2: P2 = P2 + SC: PA = Q + P2
15005 A$ = " FOR THIS HOLE"
15008 CLS
15010 PRINT 39, "CONGRATULATIONS"
15015 PRINT 73, "PLAYER": LP = 1
15020 PRINT
15030 PRINT "YOU ARE IN THE HOLE"
15040 PRINT "FOR "SC" SHOTS"
15060 IF SC = PA - 2 THEN PRINT "EAGLE"; A$
15062 IF SC = PA - 1 THEN PRINT "BIRDIE"; A$
15064 IF SC = PA THEN PRINT "PAR"; A$
15066 IF SC = PA + 1 THEN PRINT "BOGEY"; A$
15068 IF SC = PA + 2 THEN PRINT "DOUBLE BOGEY"; A$
15069 IF SC = 1 THEN PRINT "HOLE IN ONE!!": GOTO 15072
15070 PRINT
15072 PRINT "YOUR TOTAL SO FAR IS" TT
15074 IF Q = 0 THEN PRINT "YOU ARE ON PAR FOR THE COURSE"
15076 IF Q > 0 THEN PRINT "YOU ARE "Q" OVER PAR FOR THE COURSE"
15078 IF Q < 0 THEN Q = ABS(Q): PRINT "YOUR TOTAL IS "Q" UNDER PAR"
15080 PRINT: PRINT
16000 PRINT "PRESS THE SPACE"
16010 K$ = INKEY$
16020 I$ = INKEY$: KD = RND(OD)
16030 DD = DD + 1: IF DD > 100 THEN DD = 1
16040 IF I$ = "" THEN I16020
16050 IF I$ < ">" THEN I16020
16060 CLS
16100 IF LPL = 1 THEN HO = HO + 1: GOTO 350
16200 IF LPL = 2 AND LPL = 1 THEN LPL = 0: HO = HO + 1: GOTO 350
16210 IF LPL = 2 AND LPL = 0 THEN LPL = 1: GOTO 350
20000 COLOR 4
20001 MODE(1): GF = 0
20002 IF PA = 40RPA = 5 THEN 20112
20005 FOR I = 0 TO 127 STEP 2
20010 SET(I, 8): SET(RND(126), RND(7))
20020 NEXT
20030 FOR I = 0 TO 40 STEP 2
20040 SET(I, 31): SET(RND(40), 31 + RND(31))
20050 NEXT
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20060 FOR I = 86 TO 127 STEP 2
20070 SET(I, 31): SET(RND(40) + 86, 31 + RND(31))
20080 NEXT
20090 FOR I = 31 TO 63 STEP 2
20100 SET(40, I): SET(86, I)
20110 NEXT
20111 GOTO 20200
20112 IF P2 = 2 THEN 20140
20115 FOR I = 0 TO 127 STEP 2
20119 SET(I, 8): SET(RND(126), RND(7))
20120 NEXT
20122 FOR I = 16 TO 127 STEP 2
20124 SET(I, 31): SET(RND(110) + 16, 31 + RND(31))
20126 NEXT
20128 FOR I = 31 TO 63 STEP 2
20130 SET(16, I)
20132 NEXT
20134 GOTO 20200
20140 FOR I = 0 TO 127 STEP 2
20142 SET(I, 8): SET(RND(126), RND(7))
20144 NEXT
20150 FOR I = 0 TO 111 STEP 2
20152 SET(I, 31): SET(RND(110), RND(31) + 31)
20154 NEXT
20156 FOR I = 31 TO 63 STEP 2
20158 SET(111, I)
20160 NEXT
20162 GOTO 20200
20200 FOR I = A - G TO A + G
20210 FOR J = BB - G TO BB + G
20220 SET(I, J)
20225 NEXT: NEXT
20226 COLOR 2
20228 FOR I = BB - 11 TO BB: RESET(A, I): NEXT
20232 FOR I = BB - 11 TO BB: SET(A, I): NEXT
20233 FOR I = BB - 11 TO BB - 8
20234 FOR I = A TO A + 4
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20235 SET(I, J): NEXT: NEXT
20236 IF ZB = 1 THEN 20265
20238 COLOR 2
20240 FOR I = C - BTOT + BSTEP 2
20250 FOR J = D - BTOT + BSTEP 2
20260 SET(I, J)
20264 NEXT: NEXT
20265 IF ZJ = 1 THEN 20273
20266 COLOR 2
20267 FOR I = J1 - J3 TO J1 + J3 STEP 2
20268 FOR J = J2 - J3 TO J2 + J3 STEP 2
20269 SET(I, J)
20270 NEXT: NEXT
20273 IF ZW = 1 THEN 20349
20275 COLOR 3
20280 FOR I = E - WTOT + WSTEP 2
20290 FOR J = F - WTOT + WSTEP 2
20300 SET(I, J)
20310 NEXT: NEXT
20349 COLOR 4
20350 FOR I = SX - 2TOSX + 2
20360 SET(I, 60)
20365 NEXT
20370 FOR I = 60 TO 63
20380 SET(SX, I)
20385 NEXT
20390 RETURN
20980 K$ = INKEY$
20982 I$ = INKEY$: IF I$ = "" THEN 20982
20984 IF I$ < ">" THEN 20982
20990 RETURN
60000 CLS
60010 PRINT "YOU WERE IN THE WATER AND HA VE"
60020 PRINT "BEEN REPOSITIONED FURTHER BA CK"
60030 PRINT "WITH A PENALTY OF 1"
60040 FOR I = 1 TO 3000: NEXT
60050 GOTO 715
60060 MODE(1)
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60070 GS = INT(47 / (2 * G))
60080 HH = 2 * (H - A) * GS + 63
60090 KK = (K - BB) * GS + 31
60093 COLOR 4
60095 FOR I = 12 TO 106 STEP 2
60100 SET(I, 8): SET(I, 55)
60110 NEXT
60120 FOR I = 8 TO 55 STEP 2
60130 SET(12, I): SET(106, I)
60140 NEXT
60145 COLOR 2
60150 FOR I = 12 TO 31
60160 SET(63, I)
60165 NEXT
60170 FOR I = 63 TO 75
60180 FOR J = 12 TO 18
60190 SET(I, J)
60200 NEXT: NEXT
60210 FOR I = 63 - GSTO 63 + GS
60220 FOR J = 31 - GS / 2 TO 31 + GS / 2
60230 SET(I, J)
60240 NEXT: NEXT
60243 COLOR 4
60245 K$ = INKEY$
60246 I$ = INKEY$
60250 SET(HH, KK): SET(HH + 1, KK)
60270 IF I$ = "" THEN 60246
60280 IF I$ < ">" THEN 60246
60285 IF I$ <= 5 THEN 15000
60290 GOTO 8004
60300 PRINT 176, "30"
60310 PRINT 208, "."
60312 PRINT 240, "."
60314 PRINT 272, "."
60320 PRINT 297, "180... BALL... 0"
60330 PRINT 336, "."
60332 PRINT 368, "."
60334 PRINT 400, "."
60340 PRINT 432, "270"
60360 RETURN
```

FULL GAME AT 20 ON TAPE

## KNIGHTS CROSS

The program is purely graphics and works as follows:  
Line 16 sets random colour.

Lines 30-60 creates what I call an inverted German Cross in multi colours.

Lines 90-200 draw a circle in the cross.

Lines 345-370 draw a square. Line 370 pauses to display the image.

The end result looks like the 'Knights Cross with oak leaves' just like the Germans issued their war heroes.

It shows how we can use the capabilities of the VZ200 to draw very intricate designs by allowing the composition and placement of the A Z Y in the lines 40-43 and 100-170, i.e. A + 60 change to A - 60 or A + 60, 30 + Y change to 30 - Y, A - 60 all sorts of wonderful patterns can be created.

G. Lucas  
Boroko PNG

```
1 REM "KNIGHTS CROSS"
2 REM "LIE LURASIA NEW GUINEA"
3 REM "COURTESY"
10 CLS
14 MODE(1)
15 FOR I = 1 TO 4
16 C = RND(3) + 1: COLOR C
20 FOR A = RTOR
30 Y = SD(R * R * R) * Y = INT(Y * .5)
40 SET(A + 60, 30 + Y)
41 SET(A - 60, 30 - Y)
42 SET(Y + 65, 32 + A)
43 SET(55 - Y, 32 + A)
60 NEXT: NEXT
70 FOR I = 1 TO 12
80 FOR A = RTOR
90 Y = SD(R * R * R) * Y = INT(Y * .5)
95 C = RND(3) + 1: COLOR C
96 SET(A + 60, 30 + Y): SET(A - 60, 30 - Y)
100 SET(A + 12, 30 + Y)
110 SET(A + 12, 30 - Y)
120 SET(A + 114, 30 + Y)
130 SET(A + 114, 30 - Y)
140 SET(A + 60, 13 - Y)
170 SET(A + 60, 50 + Y)
200 NEXT: NEXT
245 C = RND(3) + 1: COLOR C
246 FOR X = 0 TO 127: FOR Y = 0 TO 127: SET(X, Y): NEXT: NEXT
250 FOR X = 0 TO 127: FOR Y = 62 TO 63: SET(X, Y): NEXT: NEXT
260 FOR X = 0 TO 127: FOR Y = 106 TO 107: SET(X, Y): NEXT: NEXT
270 FOR X = 126 TO 127: FOR Y = 0 TO 63: SET(X, Y): NEXT: NEXT
280 FOR I = 1 TO 2000: NEXT
2800 GOTO 14
```

AT 00 ON TAPE.

410 COPY